ABSTRACT OF THE INVENTION

FREE SPACE MONITORING SYSTEM FOR MOTOR VEHICLES

[00088] In complex vehicle maneuvers it is often difficult for the driver of the motor vehicle to estimate along which tract the vehicle will move and how much free space is necessary in order to avoid collision. This is the case in particular when the vehicle operator is not familiar with the dimensions of the vehicle or the maneuvering characteristics thereof.

[00089] A process is provided for monitoring the environment space in the direction of travel of the own vehicle, in which image data of the environment around the vehicle in the direction of travel of the vehicle is recorded using a camera system. Further, the three-dimensional free space required for unimpeded travel is calculated in advance in a signal processing unit using operating parameters and the dimensions of the vehicle stored in a data-base. The operator of the motor vehicle thus has displayed to him in a display at least those parts of the image data obtained from the camera system which correspond to the area of the required free space. In inventive manner, the image data associated with the required free space is subjected to a further processing, whereby as a result of this further processing, the vehicle operator is informed regarding whether or not a sufficient free space is available to him for unimpeded travel. It is thus possible therewith, in inventive manner, by a continuous evaluation of the image data, to automatically react to a dynamic change in the vehicle environment and to inform the vehicle operator as to whether a

sufficient free space is still available or not for unimpeded travel. A particularly advantageous mode and manner of informing the vehicle operator regarding the amount of free space available to him is comprised therein, that in the framework of the further processing of the image data, the image data displayed to the vehicle operator has superimposed a symbolic representation of the boundary limits of the required free space as predicted in the signal processing unit. Therein it is particularly advantageous to describe the edge boundaries by symbolic-represented walls. The height of the walls corresponds herein to the height of the required free space (that is, essentially the dimensions stored in memory regarding the maximal height of the vehicle).

(Fig. 1)